



Collaborating Across Healthcare to Improve Education: Online Learning Using SCORM and MedBiquitous Standards

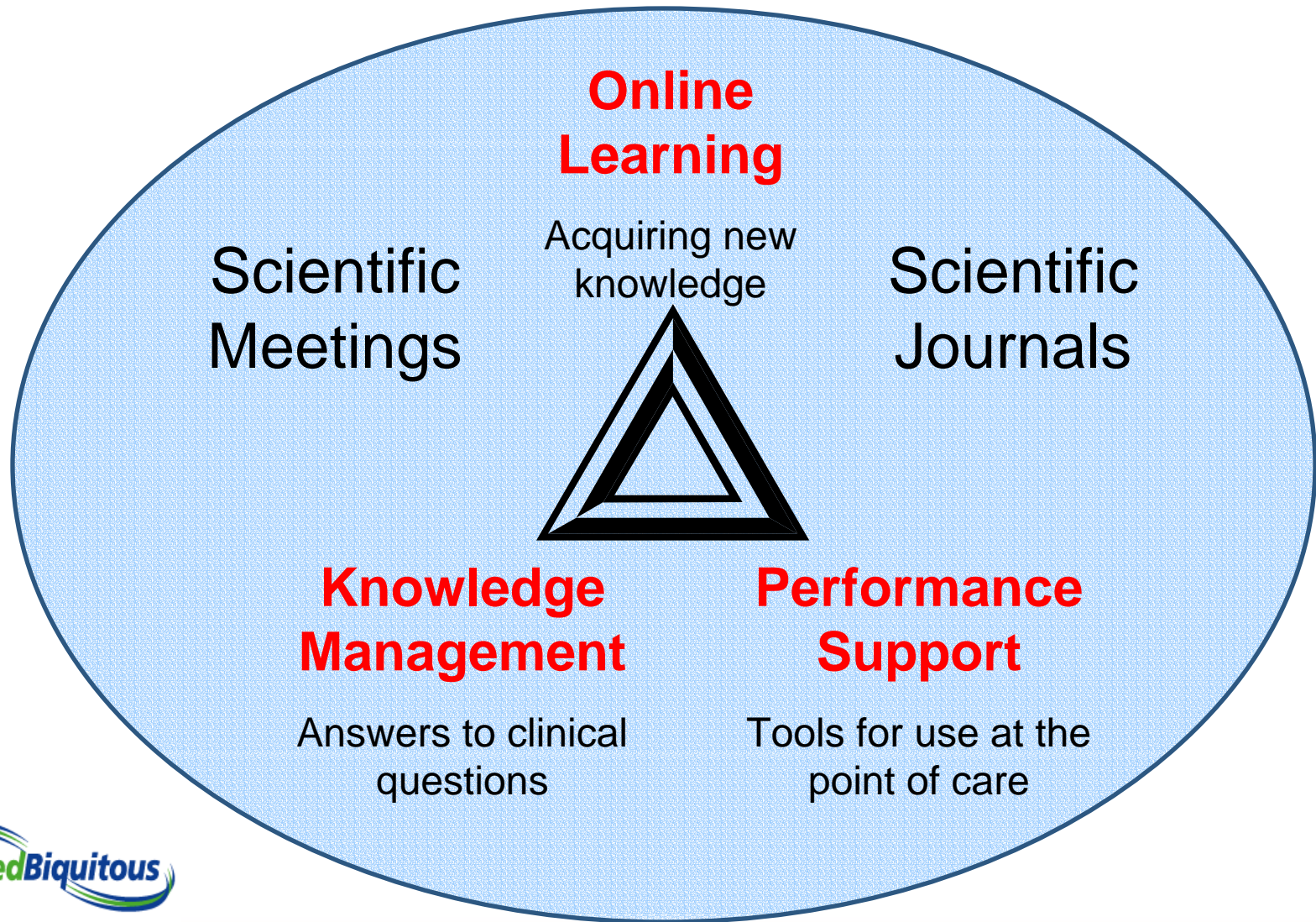
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What can healthcare learn from Boeing?

- **Interactive Electronic Technical Manual (IETM)**
- **F/A-18 E/F**
 - Multi-vendor
 - 90,000 pages
 - 18,000 tasks used 34,000 times
 - 8,000 graphics used 180,000 times
 - 3,000 common steps 52,000 times
- **Standards-based approach to education and performance support**



Educating Healthcare Professionals



Critical Questions: Learning and PHIN

- What should be the role of online learning?
- Which industry standards will enable this role?
- What can be done to promote a learning culture within public health?



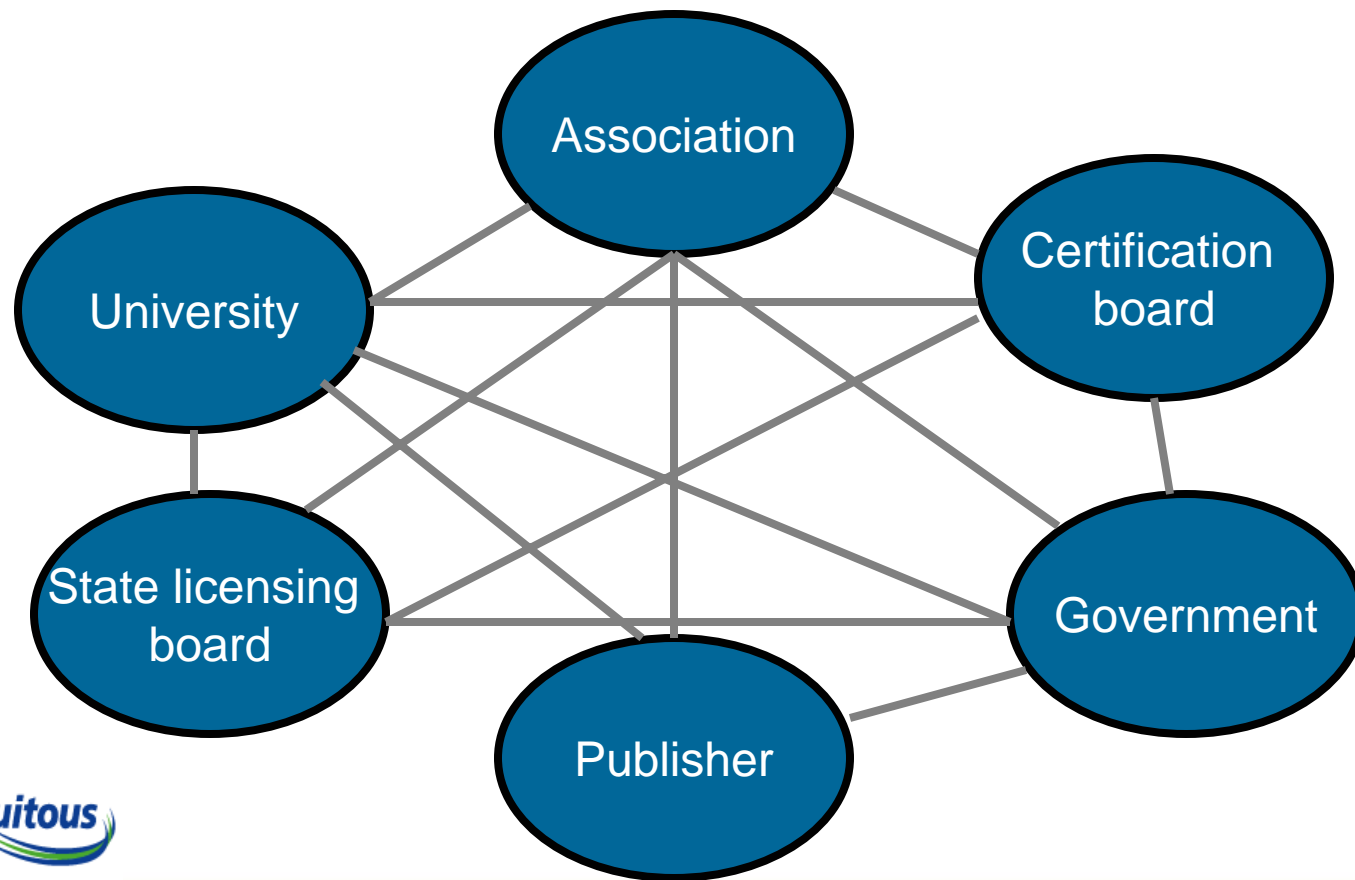
Outline

- Why learning technology standards?
- What is MedBiquitous?
- How is MedBiquitous working with ADL and SCORM?
- How will MedBiquitous standards address the needs of healthcare educators?



Why standards for healthcare education?

WARNING: Ambitious plans for reform of CE, CME and maintenance of certification will fail without data interchange standards.



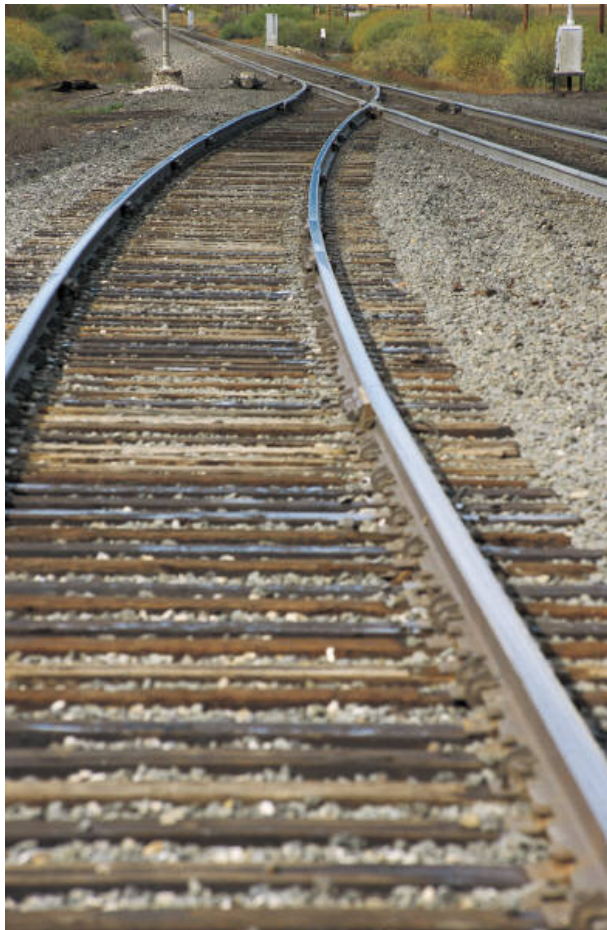
MedBiquitous Mission

To advance medical education through technology standards that promote professional competence, collaboration, and better patient care.

Non-profit, member-driven, standards development organization



Scope of Standards Development



MedBiquitous develops information technology (XML) standards for:

- Medical education and training
- Medical professional competence assessment, certification, and licensure
- Medical professional and scientific publications
- Medical professional online communities and portals

ANSI Accredited Standards Developer

- ANSI accredits standards development organizations (SDOs)
- Essential requirements for due process
 - Openness
 - Lack of dominance
 - Balance
 - Notification of standards development and coordination
 - Consideration of views and objections
 - Consensus vote
 - Appeals



Non-profit Members

- *American Academy of Family Physicians*
- *American Academy of Ophthalmology*
- *American Academy of Otolaryngology – Head and Neck Surgery*
- *American Academy of Pediatrics*
- *American Association of Medical Colleges*
- *American Association for Thoracic Surgery*
- *American Association for Vascular Surgery*
- *American Board of Pediatrics*
- *American College of Chest Physicians*
- *American College of Gastroenterology*
- *American College of Radiology*
- *American College of Surgeons*
- *American Head and Neck Society*
- *American Heart Association*
- *American Medical Association*
- *American Psychiatric Association*
- *American Society of Clinical Oncology*
- *Association of Academic Health Centers*
- *CareLearning*
- *Council of Medical Specialty Societies*
- *CTSNet (40 thoracic societies)*
- *European Association for Cardiothoracic Surgery*
- *Federation of State Medical Boards*
- *International Council of Ophthalmology*
- *Society for Critical Care Medicine*
- *Society of Vascular Surgery*
- *Stein Gerontological Institute*

Gov't, University, Corporate Members

Gov't & University

- *Centers for Disease Control*
- *National Library of Medicine, USA*
- *Veteran's Administration*
- *Johns Hopkins*
- *Katholieke Universiteit, Leuven, Belgium*
- *UNITAR, Malaysia*
- *HighWire Press, Stanford University*
- *Carnegie Mellon University*

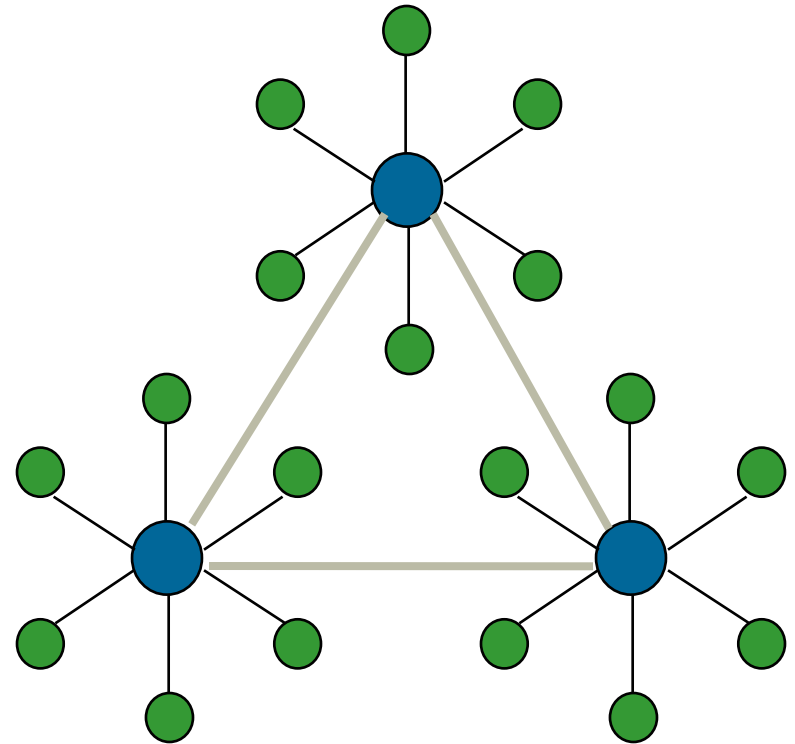


Corporate

- *AstraZeneca*
- *Aventis*
- *Johnson & Johnson*
- *Pfizer*
- *Elsevier Science*
- *John Wiley and Sons*
- *Accelera*
- *Outstart*
- *TMA Resources*

MedBiquitous' SCORM-related Activities

- Define requirements specific to healthcare
- Define a consistent way of implementing these requirements (SCORM healthcare profile)
- Design web services to connect government, academies, boards, and licensing entities



Healthcare Education Requirements

- Credit
- Provider accreditation
- Activity accreditation
- Credit type
- Off label drug use
- Conflict of interest disclosure
- Curriculum classification
- Educational objectives
- ACGME competencies
- Level of evidence
- Date released
- Date reviewed
- Subject from medical taxonomy
- Category
- Mapping to guidelines
- Mapping to formularies


MedBiquitous Standards Development Activity

Draft Technical standards (specifications and schemas)

- P Member/professional profile
- P Healthcare Learning Object Metadata
- P Activity reporting
- D Journal services
- I Curriculum
- I Metadata
- I Medical Education Metrics

P = production
D = development
I = investigation

More interesting than J.Lo...



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AGENT MODULES

MODULE INTRODUCTION

LESSONS

1. General Overview
2. Clinical Presentation
3. Differential Diagnosis
4. Laboratory Issues
5. Medical Management
6. Public Health Issues
7. Veterinarian Issues
8. Self Assessment

ADDITIONAL RESOURCES

CDC Home | Search | Health Topics A-Z

Emergency Preparedness & Response

Home | Search | Contact Us


PLAGUE

LESSON 4

LABORATORY ISSUES

Pneumonic Plague - Laboratory Testing

- Specimens should be collected before initiation of therapy.
- Sputum, blood, and lymph node aspirate should be submitted for Gram stain and culture.
- Microscopic Findings:
 - gram-negative coccobacilli
 - Wright, Giemsa, or Wayson's stain may show bipolar (safety pin) staining.
- Sera for acute and convalescent antibody detection should be obtained from susceptible health authorities in the event an epidemic occurs. Culture is not usually helpful in diagnosis due to the length of time for testing.



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BACK NEXT

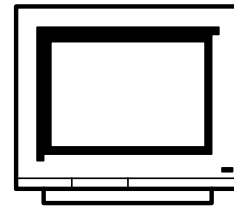
What are HLO's?

- Discrete units of digital instruction typically focused on a single learning objective
- May be used with other HLO's in courses or individually in performance support

Integrated ... into clinical workflow

Relevant ... to the clinical situation

Timely ...



Clinical system

What are the clinical presentations of the plague?



Interoperability of HLO's is Essential

- Across organizations
- Across repositories (via CORDRA)
- Across clinical systems (via HL7 standards)
- Across content collaborations



Plague: What Family Physicians Need to Know

Treating
Plague

Clinical
Presentation
of Plague

Microscopy

Laboratory
Issues

 = AAFP
 = CDC
 = HEAL

Accountability in Education and Assessment

- Continuing education reforms
- Maintenance of competence
- Compliance training

Who is the learner?
What educational activities
has the learner
completed?
Did the learner learn?



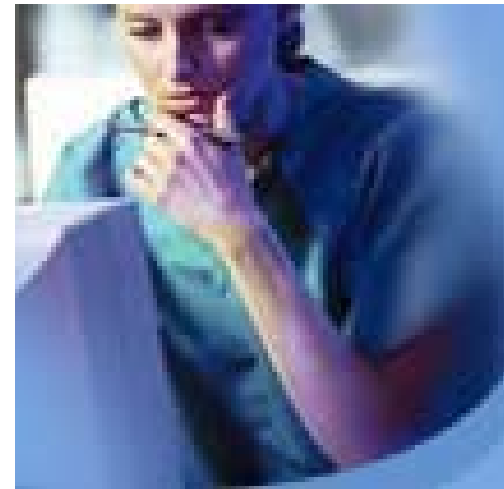
SCORM provides mechanism for this type of tracking.

Focus on Outcomes

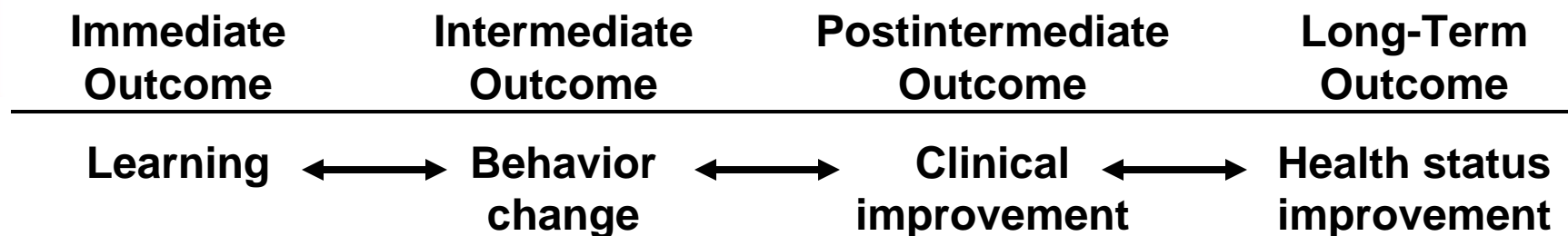
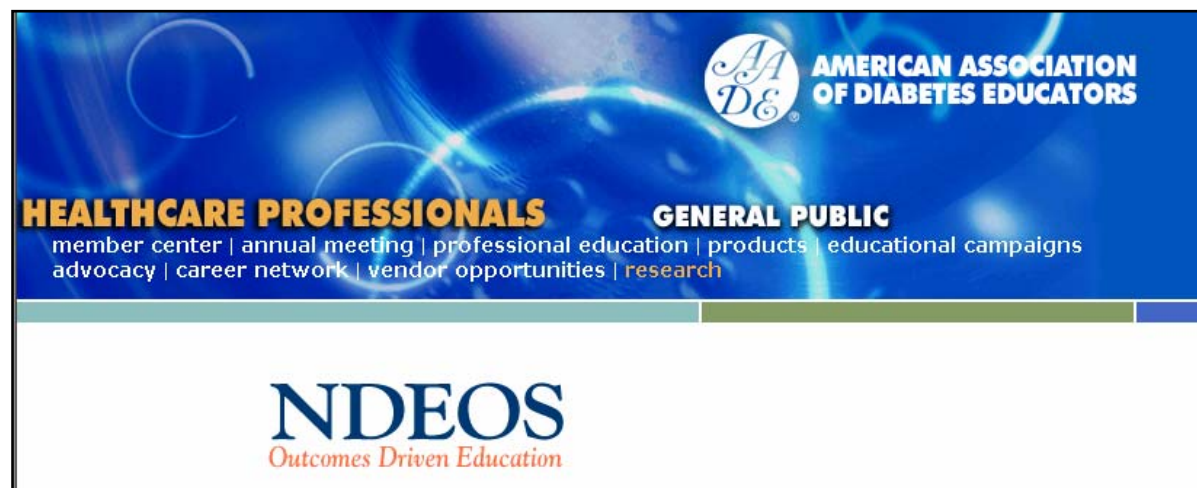
- HLO's encapsulate learning in discrete, measurable units
- E-learner tracking using SCORM facilitates assessment and outcomes analysis

Did learning impact behavior?

Did behavior impact clinical outcomes?



National Diabetes Education Outcomes System



Embedding Education in the NHII



The poster features a collage of images: a stethoscope, a computer monitor displaying a network diagram, a keyboard, a caduceus, and binary code (01001010, 10011010, 01101010). In the background, a man and a woman in medical scrubs are visible.

NATIONAL HEALTH INFORMATION INFRASTRUCTURE 2004
**CORNERSTONES FOR
ELECTRONIC HEALTHCARE**
JULY 20 - JULY 23, 2004 WASHINGTON, DC

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